

CLAIMS

What is claimed is:

- 1 1. An integrated circuit comprising:
2 a plurality of thermal sensors each placed in one of a plurality of different locations
3 across the integrated circuit; and
4 an averaging mechanism to calculate an average temperature from the plurality of
5 sensors.
- 1 2. The integrated circuit of Claim 1 further comprising sense circuitry
2 coupled to each of the plurality of thermal sensors to compare a sensed temperature to a
3 threshold and to generate an interrupt in response thereto.
- 1 3. The integrated circuit of Claim 1 further comprising a register associated
2 with the averaging mechanism to store a threshold temperature value and interrupt logic
3 associated with the averaging mechanism to generate an interrupt if the calculated
4 average temperature exceeds the threshold temperature.
- 1 4. The integrated circuit of Claim 3 further comprising clock adjustment
2 logic to decrease a clock frequency of the integrated circuit in response to an interrupt
3 from the interrupt logic indicating that the threshold temperature has been exceeded.
- 1 5. The integrated circuit of Claim 3 wherein the register is programmable by
2 the integrated circuit.
- 1 6. The integrated circuit of claim 5 further comprising threshold adjustment
2 logic to program the register to a different threshold temperature in response to an

3 interrupt from the interrupt logic indicating that the threshold temperature has been
4 exceeded.

1 7. The integrated circuit of claim 6 wherein the threshold adjustment logic is
2 further to program the register to a second different threshold temperature in response to
3 an interrupt from the interrupt logic indicating that the first different threshold
4 temperature has been exceeded.

1 8. The integrated circuit of Claim 1 further comprising clock adjustment
2 logic to control the temperature of the integrated circuit by increasing and decreasing an
3 integrated circuit clock frequency in response to the calculated average temperature.

1 9. The integrated circuit of Claim 1 further comprising halt logic to halt
2 operation of the integrated circuit in response to the calculated average temperature.

1 10. The integrated circuit of Claim 1 further comprising an interrupt handler
2 to display information regarding the calculated average temperature to a user of the
3 integrated circuit.

1 11. The integrated circuit of Claim 1 further comprising interrupt logic to
2 generate a first interrupt if the calculated average temperature exceeds a first threshold
3 and a second interrupt if the calculated average temperature exceeds a second threshold.

1 12. A method comprising:
2 sensing temperature at a plurality of different locations across an integrated circuit; and
3 calculating an average temperature from the plurality of different sensed temperatures.

1 13. The method Claim 12 further comprising comparing each of the plurality
2 of sensed temperatures to a threshold generating an interrupt in response thereto.

1 14. The method of Claim 12 further comprising storing a threshold
2 temperature value in a register and generating an interrupt if the calculated average
3 temperature exceeds the stored threshold temperature.

1 15. The method of Claim 14 further comprising decreasing a clock frequency
2 of the integrated circuit in response to an interrupt indicating that the threshold
3 temperature has been exceeded.

1 16. The method of claim 14 further comprising programming the register to a
2 different threshold temperature in response to an interrupt indicating that the threshold
3 temperature has been exceeded.

1 17. The method of claim 16 further comprising programming the register to a
2 second different threshold temperature in response to an interrupt indicating that the first
3 different threshold temperature has been exceeded.

1 18. The method of Claim 12 further comprising controlling the temperature of
2 the integrated circuit by increasing and decreasing an integrated circuit clock frequency
3 in response to the calculated average temperature.

1 19. The method of Claim 12 further comprising halting operation of the
2 integrated circuit in response to the calculated average temperature.

1 20. The method of Claim 12 further comprising displaying information
2 regarding the calculated average temperature to a user of the integrated circuit.

1 21. The method of Claim 12 further comprising generating a first interrupt if
2 the calculated average temperature exceeds a first threshold and a second interrupt if the
3 calculated average temperature exceeds a second threshold.

004077 " 84420260